Caring for British Library physical collections
Position paper and strategic direction 2017-20

1. Introduction

The following paper sets out the methods and activities in place to care for the British Library's (BL) physical collections and the current challenges to meet future needs. Both mature and recently developed work streams are presented to provide an overview of methods, approaches and principles that support the collection and, in turn, the strategic aims of the library.

1.1 Our purpose

Under the British Library Act 1972 the collection is to be managed and safeguarded as 'a centre for reference, study, bibliographical and other information services'. In relation to caring for the collection this mandate is interpreted that the collection should be both accessible for use and preserved for as long as possible.

Caring for the collection is a library wide concern and all procedures and activities are designed to reduce risk to the collection. Every member of staff and user coming into contact with items has responsibility to do so. The BL is a working library and 'wear and tear' is identified as the highest risk to collections due to use. Promoting awareness and delivery of policy, recommendations and actions to support longevity of the collection are the responsibility of the Conservation team. Conservation is a constituent part of the BL Collection Management department that ensures both physical and digital material is effectively managed through the content Life Cycle, illustrated in Figure 1 below.

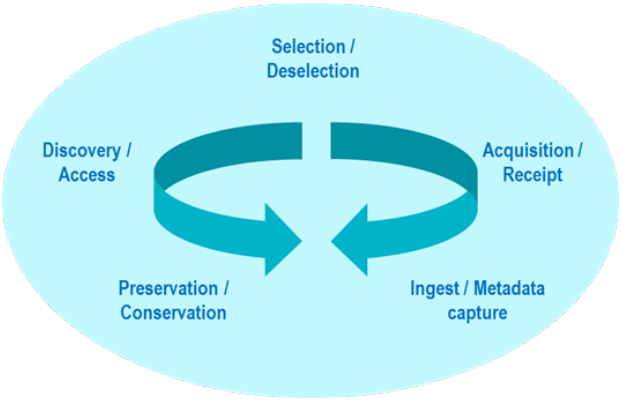


Figure 1 the content life cycle model for physical materials

Conservation is, therefore, one of a range of enabling functions within the life cycle model whose particular remit is to put in place actions and environs that reduce and mitigate risk relating to use, and also natural deterioration and environmental factors for the physical collections.

Conservation comprises 5 distinct but inter-related teams, working collaboratively with each other and across the BL on both Boston Spa and St Pancras sites. Staffing complement are 50 people encompassing a range of specialisms.

Preventive Conservation	Setting and maintaining standards of environment, collection care awareness, housekeeping, disaster preparedness, pest management
Collection Care North	Preventive conservation at Boston Spa & box making
Conservation Science	Addressing scientific & risk management issues relating to collection care and enabling enhanced interpretation through imaging techniques
Conservation Treatment	Treatment of individual items or collections for all uses
Digitisation Support	A component of the digitisation workflow to facilitate safe imaging

1.2 Strategic fit

Effective management of physical collections supports the delivery of BL core purposes covering the parallel aims of access and preservation:

Custodianship	Conservation, as part of Collection Management, underpins this purpose and requires a long term, implemented and sustainable approach
Research	Research of all kinds is supported and stimulated via use and interpretation of collections. Conservation undertakes research to enhance understanding of care and interpretation of the collections
Business	Business can be supported and inspired by the availability and interpretation of collections
Culture	Our physical collections are displayed onsite and on loan to promote memorable cultural experiences for all
Learning	Learners of all ages engage with physical collection items to understand the content and context of primary sources and also to learn about conservation and care of items
International	We work with global partners and peers to enhance and exchange best practice and conservation knowledge

1.3 Strategic Mission Statements

Mission statements specifically for Conservation have been created to complement and augment the overall Collection Management aims. These define how we wish to be perceived, how we approach our challenges and work with others, and how we aim to have current skills.

Collection Management	**Conservation**
The Collection is visible, accessible and useable to the customer at point of need. • We manage the Collection to maximise use, integrity and longevity regardless of form and origin • We lead on the development and application of standards and best practices, both nationally and internationally • We work in a way that is sustainable and demonstrates 'value for money' and legal compliance • We work in an 'Open Culture' that encourages effective understanding, engagement & participation between staff and stakeholders	To ensure the Library's physical collections are available for current and future users • We are a recognised authority on preventive conservation issues, conservation treatment, heritage science & digitisation • We support the BL purposes through effective evidence based decision making, priority setting and risk assessments • Conservation is easy to work with and perceived as a visible dynamic department to the BL and its users • We generate and share knowledge and evaluate our practice to continually improve our skills and services

2 The collection

The BL physical collection numbers an estimated 150 million items relating to recorded heritage, comprising multiple formats and from all cultures, dating from 3000BC to the present day. Annual growth of the physical collection is estimated at 8 linear kilometres and is predominantly legal deposit stock but also includes significant heritage acquisitions. Whilst primarily paper and parchment based, the collections include an extensive array of material types and the majority of items comprise more than one material. For example, a book may contain paper, printing or writing media, leather, textile, metal and adhesive.

Notable numbers of textiles, wood, modern materials or plastics, sculpture, paintings, globes, furniture, ceramic and metallic artefacts, to name a few, are held in the collection.

The collection is stored in both St Pancras and Boston Spa, Yorkshire sites and location of items is dictated by the required security level, environmental conditions, level of use and access. Approximately 30% of the collection is stored in St Pancras site and 70% in Boston Spa. Broadly, printed monographs, journals and newspapers are stored at Boston Spa.

Activities for preservation and conservation support the entire collection and knowledge across the teams reflects the diversity of materials and formats. Specialists in books and paper (in all their variety) form the majority of the staffing complement alongside preventive conservators and scientists but specialists in objects, textiles, photographs and modern materials are also employed. External expert advice and contractors are engaged when specific knowledge is required that is not already in house.

3 Principles of application

In caring for the physical collection the following principles are applied:

3.1 Risk Management

- Mitigating risk to collection items is achieved through evidence based decision making and risk assessments are used as tools to realise a balance between accessibility and preservation.
- Risk based decisions are interpreted using the BL risk appetite matrix, as detailed in the BL Risk Management Framework Policy 2017, providing guidance for the level of risk to items in relation to significance and rarity.

3.2 Maximising resources

- Caring for the collection requires both planned and reactive activities. Each Conservation team has flexible workstreams built into the annual programme to respond to the changing needs of the library whilst maintaining scheduled tasks.
- Multi-disciplinary teams are formed for specific initiatives and projects to ensure appropriate skills are present. The teams are selected from across the conservation section and the library, as required.
- Where appropriate, individuals apply their skills to a range of applications across the conservation section to increase capacity.

3.3 Key Performance Indicators (KPI)

Conservation works to a suite of KPIs to demonstrate accountability and efficiency. See appendix 1 for KPI statistics for the programme year 2016-17.

- All critical environment areas to remain within specified environmental conditions (temperature, relative humidity) at least 90% of the time, so as not to put collections at risk. (In conjunction with Estates department).
- Remedial (major) treatment of items must be completed within 10% of estimated time.
- Running (minor) repairs of items are completed in less than 10 hours to ensure timely throughput.
- All exhibition and loan preparation is completed to deadline.

4 Activities undertaken by team

4.1 Preventive conservation – the foundation of care

Preventive Conservation activities lay the foundation of caring for collections across the library sites and are designed so that good practice is a constant for all who handle or

manage the collection; staff and users. Preventive Conservators act as an influencer, advisor, trainer, as well as an operational team.

Concurrent work streams are:

Setting standards, policy development, advocacy & advice	• Setting environmental standards for collection storage and reading rooms, see 4.1.1 below for more details • Reviewing storage requirements and prioritising improvements • Advising and reviewing procedures for handling, moving & transport of collection items around and between library sites & off site for loan and display • Establishing zones across library sites to clarify appropriate activities per area e.g. food & drink, access to items • Reader guidance and advice for using collections • Developing & testing policies for reading room activities e.g. reader photography, reader advisory information, gloves policy
Environmental monitoring	Monitoring conditions & trouble shooting, in conjunction with Estates department
Integrated Pest Management	Developing and maintaining systematic monitoring for pests on library sites, advising and undertaking remedial action as necessary
Dust monitoring	Systematic monitoring of dust and advising on cleaning requirements in storage areas
Training	In person and via online resources primarily aimed at reading room and curatorial teams – collection handling, page cutting, book strapping for display
Disaster preparedness	24 hour salvage team presence on both sites to respond to emergency situations affecting collection items. Activities also include training, testing of procedures, protection of collections during building works.
Mould treatment policies and treatments	Setting policies for identifying and treating mould on collection items including staff training
Quarantine room	Assessing objects entering the collection or for loan and providing quarantine conditions and treatment as required
Boxmaking	An ongoing programme of phase boxing to protect vulnerable items during storage or transport. C.12,000 boxes per annum.
Assessment of new acquisitions	Condition checking, advice, packing and moving newly acquired items

4.1.1 Preservation standards and benchmarks

A suite of preservation standards and benchmarks are applied to the library sites giving points of reference for environmental control and care standards. The standards currently used are PD 5454:2012, PAS198:2012, BS 4971:2017, Benchmarks in Collection Care (a management tool checklist). Appendix 2 gives a summary table of these standards and how they are applied.

70% of all BL collections are held in buildings designed to meet environmental standards above with conditions that can be controlled. In 2017 100% of collections held at St Pancras are within controllable environmental conditions. Some storage facilities at Boston Spa require upgrades. Broadly the most vulnerable and significant collection items are kept in environmental conditions that can be controlled. See 7.2 Strategic Challenges for more detail of the future direction for the Boston Spa site.

4.2 Science – underpinning decisions and enhancing interpretation

The science team, comprising a Conservation Scientist and an Imaging Scientist supports the care and interpretation of the collection via applied scientific techniques by addressing questions around the material composition, deterioration and management of long term change of objects.

Conservation Science directly assists decision making for conservation treatments and also underpins decisions of a scientific nature regarding environmental conditions, use, storage and display of items. Imaging Science provides enhanced interpretation of items aiding research questions primarily posed by curators and collection users.

- Non-invasive analysis techniques are used in preference on collection items.
- Destructive analysis is considered on (infrequent) occasions where the impact of the new information outweighs any impact to the item being tested.

Major work streams are:

Conservation Science	**Conservation Imaging**
• Materials identification on collection items or associated housing • Materials testing for its suitability in treatment or display purposes • Undertaking & interpreting relevant new research and its application to BL collections & processes • Advising on scientific and materials issues for colleagues and library users • Supporting & supervising research projects within the Conservation department • Development and application of risk assessment within the department and collaboratively in the BL	• Multi-spectral imaging & processing • Microscopy • CT scanning (in conjunction with Natural History Museum) • Advising on imaging techniques for colleagues and library users • Providing specialist imaging for external partners/ institutions

4.3 Conservation Treatment - remedial actions to mitigate risk

Interventive treatment on collection items is undertaken to stabilise condition thereby reducing risk in use and storage.

4.3.1 Prioritisation of items for remedial treatment

- One of the most limiting factors for remedial treatment of a vast collection is available resources and a prioritisation system is applied to select the items in most need and supporting strategic purposes.
- Items needing treatment in the annual work programme are initially recommended by subject curators and then assessed by evaluating item vulnerability in tandem with expected future use. Risk to an item is thus determined and a selection of items at current greatest risk is achieved.
- Any treatment uses the Institute of Conservation (ICON) professional framework of practice as a guide to preserve the historic and cultural integrity of the item.
- A companion approach of 'Fit for Purpose' is simultaneously applied when planning and undertaking treatment to maximise resources by only proposing the minimum treatment necessary for the item to fulfil its known future role.

In addition the following guidelines are applied:

- When treating books the existing binding is preserved wherever possible and appropriate.
- Items are considered in the context of the collection they are part of rather than just individually
- No original material will be removed from an item unless this impedes stabilisation. Any removed material will be retained with the item.
- 'Doing nothing' is an option that must be considered. Treatment is not always necessary or appropriate.

Concurrent work streams for the conservation treatment teams are:

'Bids'	Treatment of individual or groups of core collection items needing remedial work. Bids are prioritised via a risk assessment, see 4.4.1 above
Running repairs	Minor treatments of up to 10 hours with a faster turnaround than 'bids'
Mobile trolley repairs	A mobile support service for very minor repairs taking the conservator to the collections for efficiency – with a planned rotation schedule amongst collection areas, imaging services and reading rooms
Loans and exhibitions support	Work supporting condition reporting, display preparation, framing, install and de-install of items for display on site and on loan.

A target of 50% of a treatment conservator's time is dedicated to treating core collection items termed 'bids' above. As a working library, items are subject to handling by users and maintaining the target of 50% of time on core collections is a primary aim to maintain access for users. Appendix 4 shows the proportion of time allocated for treatment conservators across each activity in the programme year 2017-18.

Proposing and undertaking treatment involves judgement and internal checks are applied for quality control and to achieve consistency. Remedial actions to an item are discussed and agreed with collection curators prior to and during treatment and the agreement is recorded using an estimate form for each 'bid'. Checking of treatment is formally undertaken by team managers, the Conservation Manager and curatorial contacts. Electronic records and images of treatments are stored on a strategic library database. The database is given the classification of vital records, or those which should be kept indefinitely.

4.4 Digitisation support – enabling safe digitisation of collections

Digitisation conservation support enables all in-house, philanthropically funded and commercial digitisation projects. The BL 'Heritage made Digital' portfolio, running 2017-2020, demonstrates the BL commitment to creating digitised content from physical items for both access and preservation purposes; conservation support is incorporated within the digitisation end to end workflow. Since 2014 capability and capacity has been developed through building a team of 7 specialist conservators. Digitisation Conservators are skilled in a slightly different way to a more established treatment conservator because they need greater emphasis on wide stakeholder management and consultation, facilitating the digitisation workflow and project management.

Within the digitisation remit any remedial treatment to a collection item is only undertaken to enable safe imaging or scanning. Typically this means a minimum of stabilisation is carried out and not full treatment. Please see strategic challenges, 7.5 and 7.6 below, for further comment.

Concurrent activities for digitisation conservators are:

Surveys & consultation	Assessing the suitability of items for imaging and estimating preparation requirements
Preparation treatment	Minimal treatment of items to enable safe imaging or scanning
Assisting Imaging teams	Invigilation or advice during the imaging process
Assessing suitability of equipment	Advising on application of new or existing equipment, creating bespoke cradle or support solutions for non-standard or complex items
Updating workflow and project documentation	Ensuring shared project documentation is up to date and the workflow is appropriately supported

5 Skills development, continuous Improvement and research

Development of staff skills, reviews of current practice, research for new knowledge and improvement of operational processes are built into the annual conservation work programme. That is, a percentage of time each year is dedicated to improving skills and knowledge and its application to care for the collections.

Development activities for the team include in-house skills sharing sessions and workshops, attendance at corporate training and BL hosted conservation courses as well as external training, seminars, conferences and writing publications/ blogs. Weekly meetings and monthly presentation sessions of work done, conferences attended or new ideas developed share information across the team. Activities include:

Reviews of remedial treatments or current materials or processes in use are undertaken each year to identify current best practice and to apply this appropriately to the BL context. Past reviews include:

- Assessment and treatment of iron gall ink
- Use of adhesives
- Testing of a new treatment for 'red rot' on leather

In 2017-2018 a review of materials testing techniques will be undertaken

Continuous improvement of work flows or processes has included:

- Development of a 'fit for purpose' approach to maximise efficiency of treatments
- Updating the prioritisation method for selecting items needing treatment
- Enhancing digitisation workflows and communication between stakeholders
- Transport and handling of collection items around and between sites
- Development, testing and launch of reader photography in Reading Rooms

Research to develop new knowledge is designed to be directly and readily applicable to caring for the collections or interpretation of collections.
Recent projects include:

- Use of gels for treating iron gall ink
- A study of the impact of folding parchment
- The application of risk assessments for both treatment and relevant library wide contexts

6 Outreach & Engagement

All members of the conservation team contribute to engagement with professional peers, library users and anyone with an interest in our work, nationally and internationally. Capacity for outreach work is built into the annual programme. Activities include:

Training & supporting the collection management/ conservation profession:

- Student placements – training student conservators typically 6 weeks duration – 2-3 annually as capacity allows
- Paid internships 6-12 months for recently qualified conservators – annually
- Preventive Volunteer placement – for overseas professionals to gain experience which is not available in their local environment – annually

• Professional development – hosting professional peers to learn specific skills or knowledge – as requested
Tours & Events, social media & advice: • Bi monthly public tours/ special interest group tours of the conservation studios • Studio tours with a sign language interpreter for deaf people • Family workshops – activity days with a collection care theme • Public lunchtime talks • Collection Care enquiries - providing general advice to the public on caring for personal items • Social media channels - Collection Care blog and twitter feed • Sharing advice and knowledge with other organisations in the cultural sector, UK and internationally
Hosting training courses: • Long term collaboration with West Dean College providing CPD courses for library/ archive professionals • Hosting training courses delivered by external providers for BL staff and external professionals

7 Strategic focus 2017-20

Current strategic challenges centre on development of library sites and skills enhancement for less mature activities. As follows, with aligned purposes in parentheses:

7.1 98% of collections to be held in fit for purpose environmental conditions that can be controlled by 2025 (Custodianship)

- 70% of the BL collections are currently stored in conditions designed to achieve recognised environmental standards and that can be controlled.
- The mandate of the Boston Spa Renewed portfolio (developing and enhancing the Boston Spa campus), is to ensure the long-term preservation of the collection and will provide new and sustainable print collection management facilities for the BL collections to meet the desired target of 98%.

7.2 Development of Collection Care North team to appropriately support the collection management and digitisation activities onsite (Custodianship)

- 70% of the BL collection is stored at Boston Spa with only 10% of Conservation expertise based on site.
- Both capacity and capability of the Collection Care North team is being enhanced through 2017-20 to meet the demands of the Boston Spa Renewed portfolio and commercial strategy with skills training and additional posts.

7.3 Enhancing loans & exhibitions conservation support (Culture, International)

- Increased BL focus on exhibitions, loans and touring exhibitions require greater capacity for risk assessments, object preparation and emergency preparedness activities.
- A specialist post to manage conservation exhibition support activities was established in 2016. Dedicated work spaces and skills development for framing items, in particular, were established in 2017.
- A Loans and exhibition paid internship will start in early 2018 to encourage and enhance specialist expertise in emerging professionals.

7.4 Development of digitisation support (Research, learning)

- Exponential growth of BL digitisation activities has led to an urgent need for dedicated conservation expertise. Longer term and permanent posts are being developed to retain conservation skills and to establish a new career path.
- A funded collaborative internship between BL, The National Archives (TNA) and Bodleian Libraries will commence in 2018 to demonstrate digitisation support as a positive career choice for conservators.

7.5 Determining long term impact of digitisation on collection management activities (Custodianship, research, learning)

- An increasingly digital and digitised environment will impact on demand for and access to physical items which, in turn, influences degree of conservation intervention, priorities for treatment and resource allocation.
- Analysis of existing usage data for digitised and physical items will confirm and/or challenge current assumptions that most items tend to be handled less after digitisation. Changes in user behaviour and expectation are anticipated to become more explicit as a result.
- Collaboration with TNA and Bodleian Libraries is underway to provide comparative data.

7.6 Improving workflows to enhance resource discovery and access for users (Custodianship, research, learning)

- The current BL focus on acquiring modern literary and political archives has necessitated greater cooperation between conservation and metadata creation teams to identify and handle diverse material content and undertake necessary treatments.
- Both discovery (metadata) and conservation processes will be increasingly presented as an holistic part of collection management rather than separate entities to gain efficiencies in process thus enabling timely access by users.

7.7 St Pancras Transformed impact (Custodianship, learning, culture)

- Planned enhancement of St Pancras campus to provide additional exhibition and learning space and commercial development requires total replacement of the current Centre for Conservation, expected around 2021-22.
- New facilities will provide dedicated long term space but with risk to business continuity during the project. Although desirable to avoid an interim move during construction, the risk of disruption to services remains high. Critical workstreams, such as loans, exhibitions must continue leaving work on core collections more likely to be interrupted with associated impact on access and users.

Dr Cordelia Rogerson, Head of Collection Management South

Appendix 1

Key Performance Indicators, 2016-17

• **All critical environment areas to remain within specified environmental conditions (temperature, relative humidity) at least 90% of the time** o An overall target 97% of was achieved.
• **Conservation 'bids' to be completed within 10% accuracy of estimated time** o 90.11% accuracy achieved over 52 completed bids, taking 9% less time than estimated
• **Running (minor) repairs are completed under 10 hours.** o An average of 6.2 hours per item was achieved. 405 items received minor repairs.
• **All deadlines for exhibitions and loans are met** o All deadlines were met, with 1,210 items prepared for display

Appendix 2

Summary table of standards for preservation of collections

A range of publicly available documents, benchmarking documents or standards are currently applied to inform decisions about the long-term care of British Library analogue collections. Whilst broadly similar, each has distinct elements that are applicable. The most recently developed documents emphasise recognising the needs and context of collections to allow interpretation rather than dictating absolute compliance. Summarised below:

Standard/ date	Overview	Application for British Library collections
BS 5454: 1977 Recommendations for the storage and exhibition of archival documents Updated in 1989 and 2000	Recommendations for conditions to achieve for library and archive collections for long term preservation. The scope was comprehensive and included buildings, storage furniture, and environmental standards. In the absence of appropriate guidance this standard began to be applied to all collections and buildings (e.g. historic houses) regardless of type.	St Pancras site was built to this specification since it was the recognised standard at the time. **Note: this standard has been withdrawn and is listed for reference purposes only** It was superseded (by PD 5454: 2012 & PAS 198: 2012) but will still be frequently referred to in literature.
PD 5454: 2012 **Recommendations for the storage and exhibition of archival documents** 2012	This standard replaced BS 5454 above and differs in that it accepts that archive collections can be broad in range and may be housed in various buildings. It makes a distinction between storage and usage requirements for 'mixed traditional archive materials' and specialist archival materials. It also sets standards for building a new repository or managing collections in existing buildings.	The standard is applied generally as the replacement of BS 5454. It covers a broad scope relevant to the library collections.
PAS 198:2012 **Specification for managing environmental conditions for cultural collection** 2012	Publicly available standard for managing the setting of environmental conditions. It moved away from narrow parameters to instead explain the need to develop parameters which balance the building capability with the needs of the collections stored within them against an increasingly green agenda. This enables users to make institution-specific judgements when specifying conditions	The standard has been applied to storage areas at St Pancras following a survey to map collection and material types. The survey provided data to identify suitable parameters for the mixed collections and to show where more specific conditions were required. The data was also used to propose seasonal temperature drift, giving energy efficiency.
BS 4971:2017	An updated version of PD 5454 with reference to a wider range of format and newer material types now	

Conservation and care of archive and library collections June 2017	recognised in libraries and archives, including hand held digital media. The standard gives recommendations for managing conservation of archive and library collections, from organisational policy and strategy to on-going processes around environment, repository management and preventive and remedial treatment.	The standard will be applied generally to physical library collections.
Benchmarks in Collection Care for Museums, Archives and Libraries The Collections Trust, 2011	A management tool, not a standard, in the form of a self-assessment checklist which gives clear benchmarks for care of collections. It has a comprehensive scope including buildings, storage, housekeeping, handling and use, environmental monitoring and control, and emergency preparedness.	Used to assess BL procedures against care standards in order to plan and prioritise improvements for the entire physical collection. Specifically in relation to Boston Spa Renewed this shows some key areas where upgrades are required.

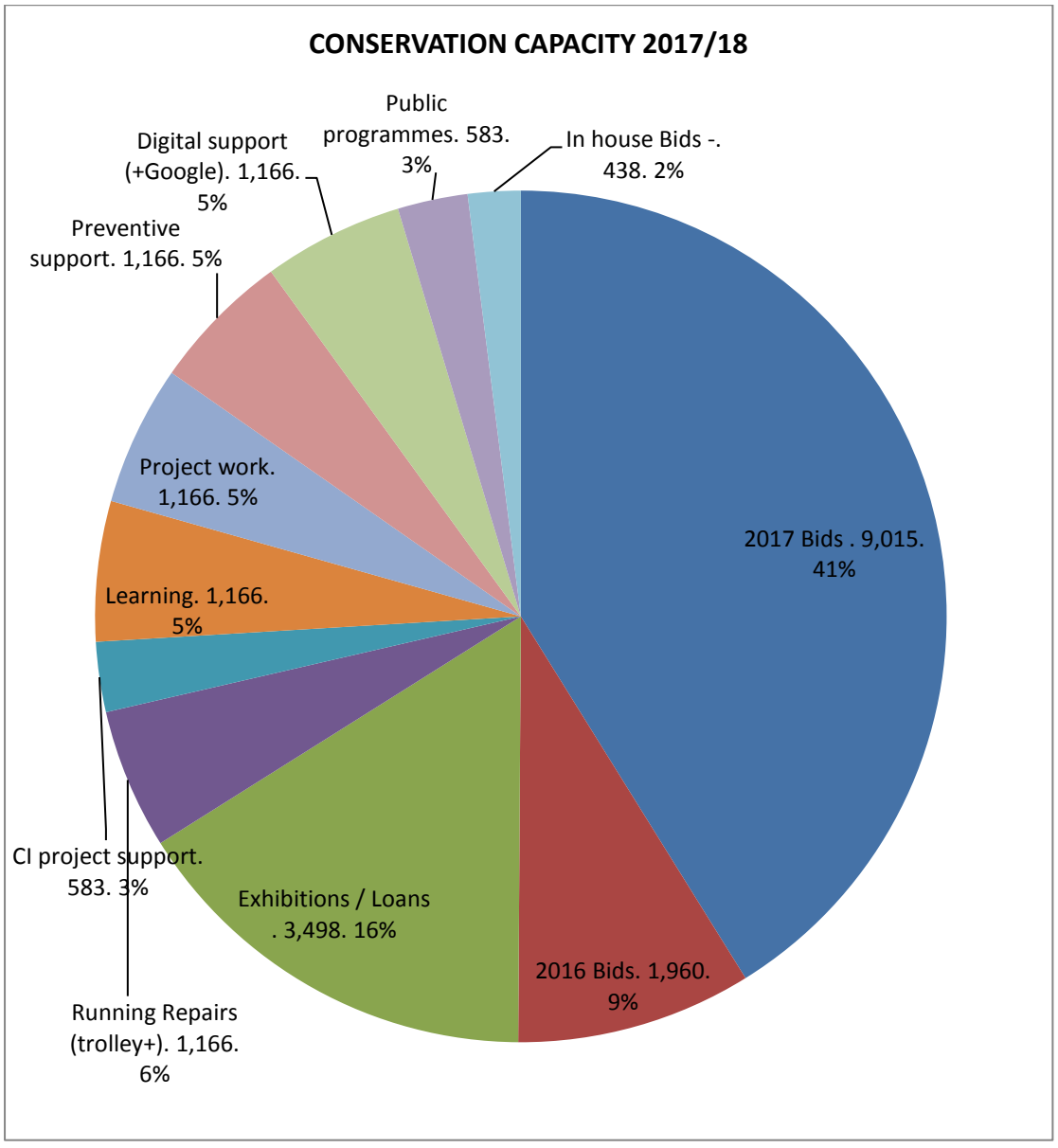
Appendix 3

Target ranges for temperature and relative humidity in critical areas

Location	Seasonal Variation	Temperature / °c	Humidity / %	Variation (max change in 24 hours) Temp RH
Collection Storage(STP), KLT; Collection Storage(BSP); NOF Studio	Summer	19±2	52±8	2^0C 5%
	Winter	18±2		
Basement storage areas	Summer	18±2	52±8	2^0C 5%
	Winter			
Exhibitions	Summer	20±2	52±8	2^0C 5%
	Winter			
Philatelic Strong room	Summer	17±2	57±3	2^0C 2%
	Winter			
Photographic Store	Summer	17±1	35±5	2^0C 5%
	Winter			
BLCC, digitisation Studios, Reading Rooms and Office areas	Summer	21±2	52±8	3^0C 5%
	Winter			
Building 31 (BSP)	Summer	16±1	52±8	2^0C 5%
	Winter			
Building 32 (BSP)	Summer	14±1	42±3	2^0C 5%
	Winter			

Appendix 4

The proportion of time allocated for treatment conservators across each workstream for programme year 2017-18


CONSERVATION CAPACITY 2017/18
Public programmes. 583. 3%
In house Bids -. 438. 2%
Digital support (+Google). 1,166. 5%
Preventive support. 1,166. 5%
Project work. 1,166. 5%
2017 Bids . 9,015. 41%
Learning. 1,166. 5%
CI project support. 583. 3%
Exhibitions / Loans . 3,498. 16%
2016 Bids. 1,960. 9%
Running Repairs (trolley+). 1,166. 6%